



REMARKS

In view of the foregoing amendments and the following remarks, reconsideration and allowance are requested.

Status of Claims

Claims 21 and 26 stand objected to in the Office Action. The informalities in the Claims have been amended to obviate the objections.

Claims 21-30 stand rejected under 35 U.S.C. 103(a) for allegedly being obvious over U.S. Patent No. 3,626,222 to Dischler ("Dischler) in view of U.S. Patent No. 6,094,116 to Tai et al. ("Tai"). The rejected Claims have been either amended or cancelled to obviate the rejections.

Of the pending Claims 1-5, 20-30, Claims 1-5 and 20 are noted to have allowable subject matter in the Office Action. Furthermore, Claims 24 and 28 are hereby cancelled.

The remarks and amendments in this response place the remaining pending claims, Claims 21-23, 25-27, 29-30 in condition for allowance.

Informalities

To place Claims 21 and 26 in condition for allowance, Claims 21 and 26 amended the spelling of "plurality" to obviate the objections. Proper consideration for allowance is requested.

35 USC 103 - Claim 21

Claim 21 is patentable because the suggested combination in the Office Action fails to teach all of the features of the

claim to those of ordinary skill in the art. For example, the cited prior art does not teach or suggest the combination of the features below of:

"the DC motor micromachined mechanical system (MEMs) commutation circuit comprising:

a plurality of windings wired into a star configuration"

The amendments to Claim 21 do not add new matter and are described in the application (page 19, lines 5-10) and shown in Fig. 7.

A 35 U.S.C. § 103 claim rejection requires a showing of some teaching, suggestion, or motivation in the prior art that supports the combination of features from the prior art references. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281 (Fed. Cir. 1985).

Tai and Dischler do not show the combined features of Claim 21 for a spaceborne system. In particular, the cited prior art does not show "a plurality of windings wired into a star configuration" for a DC motor in a spaceborne system.

Moreover, Tai and Dischler do not teach or suggest the combination of the features of Claim 21. For example, it is not obvious that the motor of Dischler would operate in a spaceborne system since it relies on "the rotational energy stored in the spindle and the inner rotor 11 connected thereto and simultaneously acting as a flywheel in the subsequent braking and slowing down of the rotary movement..." (Col 4; lines 70-75). In contrast, the application states that "miniaturization and reliability improvements are particularly important in areas such as space exploration and satellite communications" (Page 2, lines 4-6). It is not obvious to one skilled in the art of how the combination of Tai and the motor of Fig. 6 of Dischler would provide the advantages of "miniaturization and reliability

improvements ... in space exploration and satellite communications." For any of these reasons or advantages, Claim 21 should be allowed.

35 U.S.C. 103 - Claim 26

Claim 26 is patentable because the cited prior art does not at least teach or suggest the suggested combination in the Office Action of all of the features of the claim to those of ordinary skill in the art. For example, the cited prior art does not teach or suggest the combination of the feature below of:

"A DC motor for spaceborne applications comprising a commutation circuit, the communication circuit comprising:
a plurality of windings, wherein the plurality of windings comprise three pairs of primary and secondary windings wired into a star configuration"

The amendments to Claim 26 do not add new matter and are described in the application (page 18, lines 12-23; page 19, lines 5-10) and shown in Figs. 6-7.

In addition to the arguments for Claim 21, it is not obvious to one skilled in the art of how the inner rotor 111 and outer rotor 112 of Fig. 6 of Dischler would operate in spaceborne applications when the combination of the prior art does not teach "a rotating magnetic rotor having at least one pole positioned to direct the magnetic field in the relay when passing by the relay" as in Claim 26. In contrast, Fig. 6 of Dischler requires a separate "magnet 161" or a "metal lug 172" to help direct the magnetic field (Col. 5, lines 60-75; Col. 6, lines 1-9). Thus, it is not apparent that the combination of the motor in Fig. 6 of Dischler and the relay of Tai would

disclose the combined features of Claim 26. For this reason or the reasons for Claim 21, Claim 26 should be allowed.

35 USC 103 - Claim 29

Claim 29 is patentable because the cited prior art does not at least teach or suggest the suggested combination in the Office Action of all of the features of the claim to those of ordinary skill in the art. For example, the cited prior art does not teach or suggest the combination of the feature below of:

"the DC motor commutation circuit comprises:

a power source, three pairs of primary and secondary windings, three micromachined mechanical system (MEMS) relays, and a ground terminal."

The amendments to Claim 29 do not add new matter and are described in the application (page 18, lines 12-23; page 19, lines 5-10) and shown in Figs. 6-7.

The cited prior art does not show the combination of the above features "for applying power to a DC motor in spaceborne applications." For instance, it is not clear that the circuit in Fig. 6 of Dischler even shows a ground terminal. Furthermore, it is not obvious how the combination of Tai and Dischler shows all of the suggested features of Claim 29 as shown in Figs. 6-7 of the application. For these reasons, Claim 29 is different from the suggested combination in the Office Action and should be allowed.

35 U.S.C. - Claim 30

Claim 30 is patentable because the cited prior art does not at least teach or suggest the suggested combination in the Office Action of all of the features of the claim to those of

ordinary skill in the art. For example, the cited prior art does not teach or suggest the combination of the feature below of:

"wherein the DC motor commutation circuit comprises:

a power source, a plurality of windings wired into a star configuration, one semiconductor device, and a ground terminal."

The amendments to Claim 29 do not add new matter and are described in the application (page 18, lines 12-23; page 19, lines 5-10) and shown in Figs. 6-7.

In addition to corresponding arguments for Claim 29, the suggested combination in the Office Action for Claim 30 neither teaches (1) a plurality of windings wired into a star configuration nor (2) a ground terminal. Furthermore, the suggested combination in the Office Action does not teach "a method for removing power from a DC motor in spaceborne applications" with all of the features of Claim 30.

Hence, Claim 30 should be allowed since at least the cited prior art in the Office Action does not teach or suggest all of the features of the combination of Claim 30.

Dependent Claims 22, 23, 25 and 27

The remaining rejected dependent claims are allowable for the reason that the respective independent claim is allowable and for reciting allowable subject matter in their own right. Independent consideration and allowance of the dependent claims are respectfully requested.

CONCLUSION

In view of the amendments and remarks, Applicants believe that all pending Claims 21-23, 25-27, 29-30 are in condition for allowance and ask that those pending claims be allowed.



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The foregoing comments made with respect to the positions taken by the Examiner are not to be construed as acquiescence by the Applicants with other positions of the Examiner that have not been explicitly contested. Accordingly, Applicants' arguments for patentability of a claim should not be construed as implying that there are not other valid reasons for patentability of that claim or other claims.

Attached is a mark-up version of the changes being made by the current amendment.